**Unit 6 (DNA, RNA, and Protein Synthesis): Topics, Objectives, and Specific Learning Targets**

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| **Topic** | **Objective** | **Specific Learning Target** | **Where did I learn this?**  (What resources should I use to study?) | **How well do I know this?**  (scale of 1 to 3, with 3 indicating a high level of understanding) |
| DNA History and Structure | 1. I can discuss the steps in the discovery of DNA and describe its structure. | 1. I can identify the experiments and scientists involved in the discovery of DNA. |  |  |
| 2. I can describe the structure of the DNA molecule. |  |  |
| DNA Replication | 2. I can describe the purpose of DNA replication and identify the molecules, cell structures, and steps involved in the process. | 4. I can identify the purpose of DNA replication. |  |  |
| 5. I can identify and order the steps involved in DNA replication. |  |  |
| 6. I can explain the purpose of molecules and cell structures used in DNA replication. |  |  |
| Protein Synthesis (Making a Protein) | 3. I can describe the transcription and translation of the DNA code into specific proteins, and identify the molecules, cell structures, and steps involved in the process. | 7. I can describe the differences between DNA and RNA. |  |  |
| 8. I can identify and order the steps involved in transcription (the creation of mRNA from the DNA code). |  |  |
| 9. I can explain the purpose of molecules and cell structures used in transcription. |  |  |
| 10. I can identify and order the steps involved in translation (the creation of a protein from the mRNA code). |  |  |
| 11. I can explain the purpose of molecules and cell structures used in DNA replication. |  |  |
| Mutations | 4. I can determine a protein sequence using a codon chart and predict the effect of DNA mutations on the resulting proteins. | 12. I can use a codon chart to determine a protein sequence based on an mRNA code. |  |  |
| 13. I can compare / contrast the different types of DNA mutations. |  |  |
| 14. I can predict the effect of DNA mutations on the resulting protein. |  |  |